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28 September 1962
TID/TAB-75/62

MEMORANDUM FOR: Chief, Technical Intelligence Division

**SUBJECT: Staff Study Concerning Reduction of Data from
Stellar Photography**

STATEMENT OF THE PROBLEM

It is requested that NPIC obtain a contract from [redacted]
[redacted] for attitude determination from stellar exposures taken
from the next and subsequent CORONA missions.

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THE FACTS

1. On the next and subsequent CORONA missions there will be a camera linked together with the terrestrial framing camera, that will photograph the stars. The purpose of photographing the stars is to enable the accurate orientation of the vehicle and terrestrial camera.
2. NPIC does not have the production capability to reduce data from the stellar exposures even though it has the requirement.
3. [redacted] because of their participation in the "A" program, has established efficient production procedures and instrumentation for the reduction of attitude from stellar exposures.

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DISCUSSION OF THE FACTS

1. In order to determine the pitch, roll and yaw of the vehicle and/or terrestrial exposures the following procedures are necessary:
 - a. The stars must be identified.
 - b. Boss catalog of stars must be entered into a computer, NPIC does not have this capability at present.
 - c. The star images must be measured.
 - d. The measurements must be reduced in the computer. NPIC does not have the necessary program for this reduction. Items b and d above preclude any attempt that TID reduce the stellar data.

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2. The next CORONA mission will be flown probably within the next two weeks. It is the intent that [] receive the stellar exposures, reduce and forward the data to NPIC. At some date in the future, when TID has sufficient personnel and the proper computer programs for this type of problem, NPIC will phase out Autometrics and assume the entire responsibility.

RECOMMENDATIONS

It is recommended that NPIC obtain a contract from [] to reduce the required attitude parameters from stellar exposures until such time that TID is such a position to do the job.

[]
Chief, Technical Analysis Branch

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